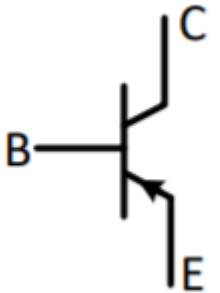
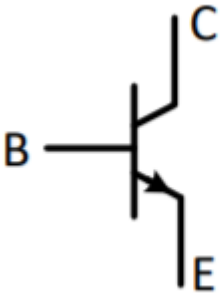


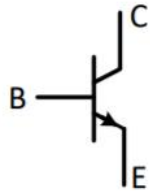
BJT Transistor



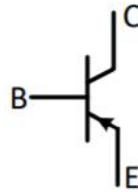
Hálfleiðari

Myndband: <https://www.youtube.com/watch?v=7ukDKVHnac4>

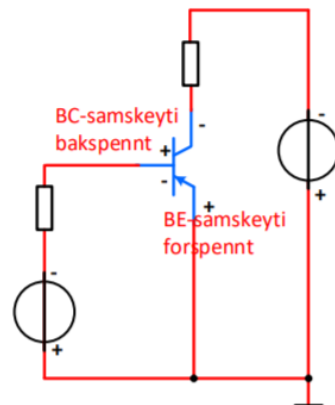
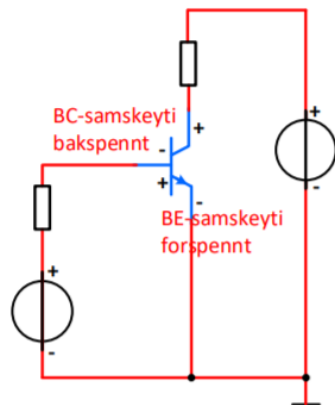
NPN og PNP



npn-transistor



pnp-transistor



Straumar og spennur í transistorum

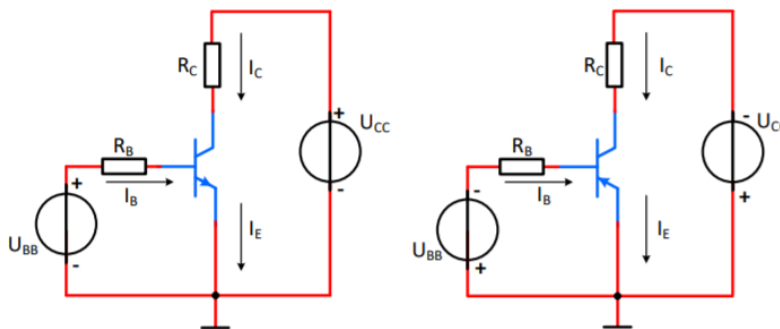
Myndband: <https://www.youtube.com/watch?v=sRVvUkK0U80>

Straumar:

$$I_E = I_C + I_B$$



Forspenna:



Straummögnunarstuðlar h_{FE} og h_{FB}

- Emitter tenging

$$h_{FE} = \frac{I_C}{I_B}$$

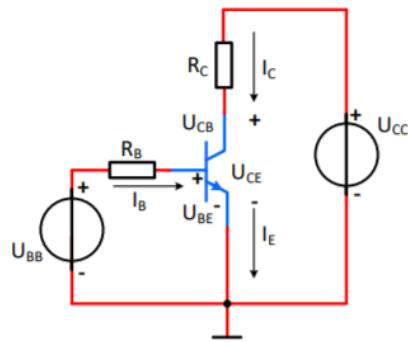
- Liggur á milli 20 – 200 og hærra
- Mikilvæg stærð og sést í upplýsingablöðum

- Base tenging

$$h_{FB} = \frac{I_C}{I_E}$$

- Liggur á milli 0.95 og 0.99 en alltaf minni en 1

Straum og spennugreining



I_B : dc base straumur U_{BE} : dc spenna milli base að emitter
 I_E : dc emitter straumur U_{CB} : dc spenna milli collectors að base
 I_C : dc collector straumur U_{CE} : dc spenna milli collectors að emitter

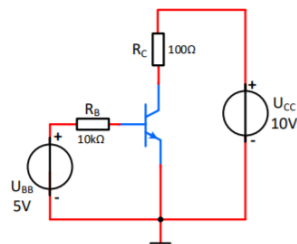
Sýnidæmi:

Reiknið h_{FE} og I_E fyrir transistor þar sem $I_B = 50 \mu\text{A}$ og $I_C = 3,65 \text{ mA}$

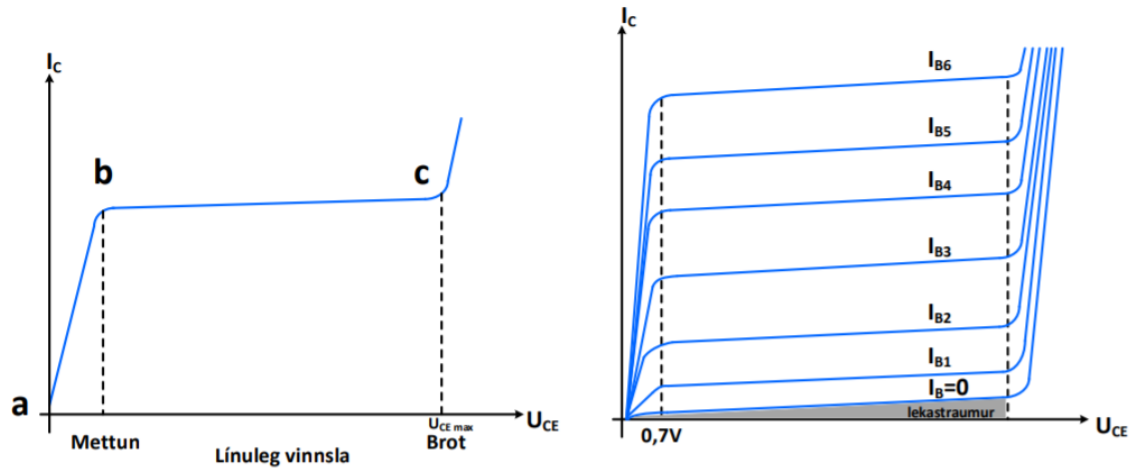
U_{BE} Liggur á milli 0.5V – 0.9V. Dæmigert **0.7V**

Sýnidæmi:

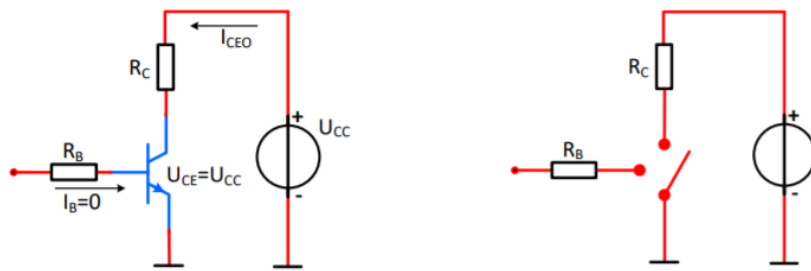
Reiknaðu I_B , I_C , I_E , U_{BE} , U_{CE} , og U_{CB} fyrir rásina á mynd 7. Transistorinn er með $h_{FE} = 150$ og $U_{BE} = 0,7 \text{ V}$.



Kennilínur Collectors



Rof (Cut off)



Mettun (Saturation)

$$U_{CE} = U_{CC} - I_c \cdot R_C$$

